Anthony Coyle

The man spearheading Pfizer's Centers for Therapeutic Innovation (CTI) initiative outlines how his company hopes to spur academia collaborations.

Pfizer recently announced it had extended its CTI initiative to include seven research hospitals in New York City. Biotech veteran Anthony Coyle, who heads the CTI program, describes the company's plans to reach back into academia.

How do you choose partnering academic institutions?

Anthony Coyle: One of the main driving considerations is the science and the focus on translational biology. We've been targeting institutions where we felt there is the best blend of basic research and individuals that really have that aspiration to see a basic research concept translated to the clinic—centers where we felt there is this focus, where there is a clear desire from individuals to see that preclinical hypothesis/concept being substantiated. Not just in animal models, but working with the same individuals or teams of individuals, who can take the hypothesis and ask a mechanistic question in a small human population to obtain data-rich, phase 1 studies and achieve positive proof of mechanism [POM] in the clinic. Another consideration is institutions that have a history of an entrepreneurial culture, that really understand the nature of a true partnership where we can be creative in how we think about a very different type of collaborative model.

What other factors do you look for in partners?

AC: Our grand ambition is to scale CTIs, both in and outside the United States, and we've already started talking with several different academic centers other than those in San Francisco, New York and Boston. One key factor is whether an academic institution is large enough. As the whole premise relies on co-location of the CTI, there has to be a large enough community of scientists and clinicians in a given area to justify investment in building a lab next door. Second, are there the right types of scientists across multiple therapeutic areas who are passionate about clinical translation? And do they want to partner with us? There has to be an appreciation of the type of close collaboration we're looking for and the opportunities the partnership presents in terms of increasing the value of an idea or hypothesis.

Why focus on biologics?

AC: Essentially, we want to make these groups as self-autonomous as they can be, so that the targets are co-selected and the candidate drugs are co-developed in the CTI center nested in the academic medical center. To build this successful partnership, we did not want to be solely dependent on other parts of the broader Pfizer community, with teams of medicinal chemists and all that's associated with small-molecule drug development. We wanted to allow the local groups working together under a steering-committee mechanism to make the best decisions about which programs should be selected, advanced and funded. There is a strong desire not to make this process bureaucratic but to simply rely on scientific rigor to take forward the best programs locally. In this model we can also take advantage of the deep therapeutic-area knowledge and drug discovery expertise and leverage that through the local sites to enhance the partnership. In a CTI we can explore more early-stage programs, and as the science develops, it means we'll be there first to develop those programs with the individuals who are key experts in a given target, in a given mechanism, in a given disease, and drive those decisions at the local centers.

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How many projects will be funded per CTI?

AC: Using the UCSF CTI as an example, we'll select eight proposals per year. The funding mechanism is capital light, with additional funding dependent on meeting milestones. By year two, some of the eight original proposals will still be in the portfolio, whereas others will have fallen out. But we intend on an annual basis to bring in eight new programs (depending on attrition of the original eight). We want to be able to terminate programs where the science, as exciting as it is, doesn't pan out in terms of translation and early-stage positive mechanistic data in the clinic. And we'll only fund programs where the science continues to be exciting, so our academic partners have the right incentives.

How will you benchmark success?

AC: We've broken this down into three different periods of deliverables. In the first year we will establish a preclinical portfolio across multiple therapeutic areas complementing our internal pipeline. The programs coming into CTIs will be at various different stages. Some will be very, very early, based on a phenotype of a knockout mouse or human *in vitro* studies. Other programs will be more advanced; for example, a mouse anti-human antibody. Here we will leverage Pfizer know-how in terms of humanization and affinity optimization. Alternatively, we might consider an antibody that is already fully humanized but has less-developed biology and a less clear path to the clinic. By 18 months some of these programs should be in the clinic. And after three years we will have several clinical programs. Importantly, we will focus on not only the therapeutic candidates themselves, but also understanding patient heterogeneity and segmentation to develop precision-medicine approaches to target the right patient with the right therapeutic. The agreements that we have with our partners focus on demonstration of positive POMs. And Pfizer will have the right to exercise an exclusive option to develop that molecule. In five years, our ambition is to have licensed the best POMs and to have developed them to the proof of concept in Pfizer.